

AMENDMENTS**Amendments to the Claims:**

1. (Currently Amended) A method of forming an interconnect in a substrate which includes one or more dielectric layers and a copper deposit, said method comprising: forming a trench in the substrate; forming a via in the substrate to the copper deposit; depositing an interconnect liner layer of aluminum-copper alloy comprised primarily of Aluminum in the trench and via; depositing copper onto the aluminum-copper alloy interconnect liner layer; and polishing the copper, wherein the interconnect liner layer is a permanent component of the interconnect and does not interact with the copper or copper deposit to form an alloy at any time while the method is performed.
2. (Previously Presented) A method as recited in claim 1, wherein the step of depositing a layer of aluminum-copper alloy comprises depositing aluminum-0.5% copper alloy using a PVD technique.
3. (Currently Amended) A method of forming an interconnect in a substrate which includes one or more dielectric layers and a copper deposit, said method comprising: forming a trench in the substrate; forming a via in the substrate to the copper deposit; depositing an intermediate liner layer in the trench and via and on the copper deposit; depositing an interconnect liner layer of aluminum-copper alloy comprised primarily of Aluminum on the intermediate layer; depositing copper onto the aluminum-copper alloy; and polishing the copper.

Serial No.: 10/615,042

Art Unit: 2815

Page 2

wherein the interconnect liner layer is a permanent component of the interconnect and does not interact with the copper or copper deposit to form an alloy at any time while the method is performed.

4. (Previously Presented) A method as recited in claim 3, wherein the step of depositing a layer of aluminum-copper alloy comprises depositing aluminum-0.5% copper alloy using a PVD technique.

5. (Original) A method as recited in claim 3, wherein the step of depositing an intermediate liner layer comprises depositing Ta/TaN.

6. (Currently Amended) An interconnect in a substrate which includes one or more dielectric layers, said interconnect comprising a first copper deposit, a second copper deposit, and an aluminum-copper alloy interconnect liner comprised primarily of Aluminum and disposed between and in contact with the first and second copper deposits and between the second copper deposit and at least one of the dielectric layers, wherein the interconnect liner is a permanent component of the interconnect and is not combined with either of the copper deposits to form an alloy.

7. (Previously Presented) An interconnect as recited in claim 6, wherein the aluminum-copper alloy interconnect liner has been deposited using a PVD technique.

Serial No.: 10/615,042

Art Unit: 2815

Page 3

8. (Currently Amended) An interconnect in a substrate which includes one or more dielectric layers, said interconnect comprising a first copper deposit, a second copper deposit, an intermediate interconnect liner comprised primarily of Aluminum and disposed between the first and second copper deposits and in contact with the first copper deposit; and an aluminum-copper alloy interconnect liner disposed between the first and second copper deposits between the second copper deposit and at least one of the dielectric layers, and in contact with the second copper deposit, wherein the interconnect liner is a permanent component of the interconnect and is not combined with either of the copper deposits to form an alloy.

9. (Previously Presented) An interconnect as recited in claim 8, wherein the aluminum-copper alloy interconnect liner has been deposited using a PVD technique.

10. (Original) An interconnect as recited in claim 8, wherein the intermediate interconnect liner comprises Ta/TaN.

11. (Previously Presented) A method as recited in claim 1, further comprising depositing the interconnect layer such that said interconnect liner is in contact with the copper deposit.

Serial No.: 10/615,042
Art Unit: 2815
Page 4

12. (Previously Presented) A method as recited in claim 1, wherein the step of depositing the interconnect liner layer comprises depositing a layer of aluminum-0.5% copper alloy.

13. (Previously Presented) A method as recited in claim 3, wherein the step of depositing the interconnect liner layer comprises depositing a layer of aluminum-0.5% copper alloy.

14. (Previously Presented) An interconnect as recited in claim 8, wherein said aluminum-copper alloy interconnect liner comprises a layer of aluminum-0.5% copper alloy.

Serial No.: 10/615,042
Art Unit: 2815
Page 5